

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1.(original): An optical transmission system having:

an optical transmitter for transmitting incoherent light;

an excitation mechanism for exciting a predetermined mode in the incoherent light transmitted from the optical transmitter or the incoherent light transmitted from the optical transmitter via a multimode optical transmission line; and

a transmission mechanism for transmitting a predetermined mode in the incoherent light transmitted from the excitation mechanism via a multimode optical transmission line.

2.(original): An optical transmission system having:

an optical transmitter for transmitting incoherent light;

an excitation mechanism for exciting a predetermined mode in the incoherent light transmitted from the optical transmitter or the incoherent light transmitted from the optical transmitter via a multimode optical transmission line;

a transmission mechanism for transmitting a predetermined mode in the incoherent light transmitted from the excitation mechanism via a multimode optical transmission line; and

an optical receiver for receiving the incoherent light transmitted from the transmission mechanism or the incoherent light transmitted from the transmission mechanism via a multimode optical transmission line.

3.(original): An optical transmission system having:

an optical transmitter for transmitting incoherent light;

an excitation mechanism for exciting a predetermined mode in the incoherent light transmitted from the optical transmitter or the incoherent light transmitted from the optical transmitter via a multimode optical transmission line;

a multimode optical transmission line for transmitting the incoherent light transmitted from the excitation mechanism; and

a transmission mechanism for transmitting a predetermined mode in the incoherent light transmitted from the excitation mechanism via the multimode optical transmission line.

4.(original): An optical transmission system having:

an optical transmitter for transmitting incoherent light;

an excitation mechanism for exciting a predetermined mode in the incoherent light transmitted from the optical transmitter or the incoherent light transmitted from the optical transmitter via a multimode optical transmission line;

a multimode optical transmission line for transmitting the incoherent light transmitted from the excitation mechanism;

a transmission mechanism for transmitting a predetermined mode in the incoherent light transmitted from the excitation mechanism via the multimode optical transmission line; and

an optical receiver for receiving the incoherent light transmitted from the transmission mechanism or the incoherent light transmitted from the transmission mechanism via a multimode optical transmission line.

5.(currently amended): The optical transmission system according to ~~any one of claims 1 to 4~~ claim 1 or 3, wherein the optical transmitter has an incoherent light source and a optical modulator for modulating light emitted from the incoherent light source and outputting the modulated light as the incoherent light.

6.(currently amended): The optical transmission system according to ~~any one of claims 1 to 4~~ claim 1 or 3, wherein the optical transmitter has an incoherent light source which can be directly modulated and emits the incoherent light.

7.(original): The optical transmission system according to claim 5, wherein the incoherent light source is an ASE light source.

8.(original): The optical transmission system according to claim 6, wherein the incoherent light source is an ASE light source.

9.(currently amended): The optical transmission system according to claim 3 or 4, wherein a graded-index optical transmission line is used as the multimode optical transmission line.

10.(original): The optical transmission system according to claim 9, wherein the graded-index optical transmission line takes the form of a graded-index multimode optical fiber having a core diameter of 40  $\mu\text{m}$  or more and 100  $\mu\text{m}$  or less.

11.(original): The optical transmission system according to claim 9, wherein the graded-index optical transmission line takes the form of a graded-index multimode optical fiber having a core diameter of 50  $\mu\text{m}$  or 62.5  $\mu\text{m}$ .

12.(currently amended): The optical transmission system according to claim 3 or 4, wherein a step index optical transmission line is used as the multimode optical transmission line.

13.(original): The optical transmission system according to claim 12, wherein the step index optical transmission line takes the form of a step index multimode optical fiber having a core diameter of 40  $\mu\text{m}$  or more and 100  $\mu\text{m}$  or less.

14.(original): The optical transmission system according to claim 12, wherein the step index optical transmission line takes the form of a step index multimode optical fiber having a core diameter of 50  $\mu\text{m}$  or 62.5  $\mu\text{m}$ .

15.(currently amended): The optical transmission system according to any one of claims 1 to 4 claim 1 or 3, wherein the predetermined mode is a base mode.

16.(currently amended): The optical transmission system according to any one of claims 1 to 4 claim 1 or 3, wherein a single-mode optical transmission line is used as the excitation mechanism.

17.(original): The optical transmission system according to claim 16, wherein a single-mode optical fiber is used as the single-mode optical transmission line.

18.(original): The optical transmission system according to claim 16, wherein a single-mode planar lightwave circuit is used as the single-mode optical transmission line.

19.(currently amended): The optical transmission system according to any one of claims 1 to 4 claim 1 or 3, wherein the excitation mechanism includes a lens

that transmits the incoherent light transmitted from the optical transmitter, a predetermined low-order mode in the incoherent light transmitted from the optical transmitter is condensed by the lens, and the resultant light is transmitted.

20.(currently amended): The optical transmission system according to ~~any one of claims 1 to 4~~ claim 1 or 3, wherein the excitation mechanism includes a diaphragm having an aperture that passes the incoherent light transmitted from the optical transmitter, a predetermined low-order mode in the incoherent light transmitted from the optical transmitter is selected by the diaphragm, and the resultant light is transmitted.

21.(original): The optical transmission system according to claim 20, wherein the diaphragm includes a first diaphragm for passing the incoherent light transmitted from the optical transmitter and a second diaphragm for passing the incoherent light passed through the first diaphragm.

22.(currently amended): The optical transmission system according to ~~any one of claims 1 to 4~~ claim 1 or 3, wherein a single-mode optical transmission line is used as the transmission mechanism.

23.(original): The optical transmission system according to claim 22, wherein a single-mode optical fiber is used as the single-mode optical transmission line.

24.(original): The optical transmission system according to claim 22, wherein a single-mode planar lightwave circuit is used as the single-mode optical transmission line.

25.(currently amended): The optical transmission system according to ~~any one of claims 1 to 4~~ claim 1 or 3, wherein the transmission mechanism includes a lens that transmits the incoherent light transmitted from the excitation mechanism, a predetermined low-order mode in the incoherent light transmitted from the excitation mechanism is condensed by the lens, and the resultant light is transmitted.

26.(currently amended): The optical transmission system according to ~~any one of claims 1 to 4~~ claim 1 or 3, wherein the transmission mechanism includes a diaphragm having an aperture that passes the incoherent light transmitted from

the excitation mechanism, a predetermined low-order mode in the incoherent light transmitted from the excitation mechanism is selected by the diaphragm, and the resultant light is transmitted.

27.(original): The optical transmission system according to claim 26, wherein the diaphragm includes a first diaphragm for passing the incoherent light transmitted from the excitation mechanism and a second diaphragm for passing the incoherent light passed through the first diaphragm.